Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date: 03-07-2021	
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Apoorva Enclaveat Ch:390**	**Apoorva Enclaveat Ch:480**
Wt. of wet material from hole (Ww) gms.	5975	5978
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10592	10595
Wt. of sand in hole+ cone (w3) gms.	4408	4405
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3328	3325
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.37	2.37
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.21	98.35
% compaction required	98%	98%

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Consultant's Representative

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

	Date: 03-07-2021	
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	1	2
Chainage	**Shiradi Sai Rathan Layout 2nd A c/s road Ch:60**	**Shiradi Sai Rathan Layout 2nd A c/s road Ch:130**
Wt. of wet material from hole (Ww) gms.		
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10594
Wt. of sand in hole+ cone (w3) gms.	4405	4406
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3326
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	0.00	0.00
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	0.00	0.00
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	0.00	0.00
% compaction required	98%	98%

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TEJUS

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**03-07-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Hegdenagar Main Rd Ch:90**	**Hegdenagar Main Rd Ch:180**
Wt. of wet material from hole (Ww) gms.		
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10594	10593
Wt. of sand in hole+ cone (w3) gms.	4406	4407
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3326	3327
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	0.00	0.00
Moisture meter reading(moisture content)	6.40	6.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	0.00	0.00
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	0.00	0.00
% compaction required	98%	98%

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Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**03-07-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**3rd c/s road Ch:5**	**3rd c/s road Ch:40**
Wt. of wet material from hole (Ww) gms.		
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10594	10588
Wt. of sand in hole+ cone (w3) gms.	4406	4412
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3326	3332
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	0.00	0.00
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	0.00	0.00
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	0.00	0.00
% compaction required	98%	98%

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Project	Improvements to roads and drains at Hegdenagar and surrounding areas in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**03-07-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**c/s b/w BDS Layout 4th and 3rd cross Rd Ch:15**	**c/s b/w BDS Layout 4th and 3rd cross Rd Ch:30**
Wt. of wet material from hole (Ww) gms.		
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10594	10595
Wt. of sand in hole+ cone (w3) gms.	4406	4405
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3326	3325
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	0.00	0.00
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	0.00	0.00
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	0.00	0.00
% compaction required	98%	98%

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Benaka Developers and Projects Pvt Ltd

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

	Date:	03-07-2021
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**c/s b/w BDS Layout 1stA and 3rd cross Rd Ch:50**	**c/s b/w BDS Layout 1stA and 3rd cross Rd Ch:100**
Wt. of wet material from hole (Ww) gms.	5974	5987
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10591
Wt. of sand in hole+ cone (w3) gms.	4405	4409
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3329
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.29	98.38
% compaction required	98%	98%

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BRUHAT BANGALORE MAHANAGARA PALIKE
BYTARAYANPURA DIVISION

Name of Work: Package 2 Consists of 3 Works of Rs.1100.00 Lakhs

3.Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division.

TEST REPORTS

FIRST & PART BILL

TEJUS CONSULTANTS
CONSULTING ENGINEERS AND DESIGNERS
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Bangalore-560079
☎ 080 - 23287532
email: tejusconsultants@gmail.com

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

Date of Testing	18-06-2021	
Layer no. or level	WMM II layer	
Depth of hole	200mm	
Field density:	1	2
Chainage	**BDS Layout 1st A cross at Chainage:55**	**BDS Layout 1st A cross at Chainage:152**
Wt. of wet material from hole (Ww) gms.		
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10594
Wt. of sand in hole+ cone (w3) gms.	4405	4406
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3326
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	0.00	0.00
Moisture meter reading(moisture content)	6.20	6.40
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	0.00	0.00
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	0.00	0.00
% compaction required	98%	98%

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Project	Improvements to roads and drains at Hegdenagar and surrounding areas in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)

	Date:	18-06-2021
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	1	2
Chainage	**BDS Layout 1st A cross at Chainage:227**	**BDS Layout 1st A cross at Chainage:317**
Wt. of wet material from hole (Ww) gms.	5992	5988
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10589
Wt. of sand in hole+ cone (w3) gms.	4405	4411
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3331
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.38	2.37
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.24	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.58	98.34
% compaction required	98%	98%

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consultants

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	17-06-2021
Sample Location	BDS Layout 1st A cross	**Date of Testing**	18-06-2021

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	358.00	356.00	339.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	276.00	275.00	262.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	82.00	81.00	77.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	22.91	22.75	22.71	
5	Average Aggregate impact value	(%)	22.79			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	BDS Layout 1st A cross	**Date of Sampling**	**17-06-2021**
		Date of Testing	**18-06-2021**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	642	76	540	76
16.0	12.5	1136	122	983	108
12.5	10.0	774	59	732	59
10.0	6.3	614	64	542	52
Total		**3166**	**321**	**2797**	**295**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.14
Elongation Index(%):	10.55
Combined FI+EL (%)	20.69

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	18-06-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	BDS Layout 1st A cross	Date of Sampling:	17-06-2021
		Date of testing:	18-06-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	376	370	3.70	96.30	95-100
22.4	1799	2169	21.69	78.31	60-80
11.2	2256	4425	44.25	55.75	40-60
4.75	2015.0	6440	64.40	35.60	25-40
2.36	1392.0	7832	78.32	21.68	15-30
0.6	775.0	8607	86.07	13.93	8.0-22.0
0.075	880.0	9487	94.87	5.13	0-8
Pan	513.0	10000			
Total	10000.0				

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Consultant's Representative

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಧಿಕಾರಿಯವರು
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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**18-06-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**BDS Layout 1st A cross at Chainage:377**	**BDS Layout 1st A cross at Chainage:407**
Wt. of wet material from hole (Ww) gms.	5989	5978
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10592	10596
Wt. of sand in hole+ cone (w3) gms.	4408	4404
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3328	3324
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.38	2.37
Moisture meter reading(moisture content)	6.40	6.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.23	2.24
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.35	98.47
% compaction required	98%	98%

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CONSULTANTS

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**20-06-2021**
Sample Location	Shiradi Sai Rathan Layout 3rd A c/s road	**Date of Testing**	**21-06-2021**

Sl. No.	**Description**		**Test No.**			**Spec Limit (%)**
			1	**2**	**3**	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	378.00	356.00	342.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	286.00	269.00	259.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	92.00	87.00	83.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.34	24.44	24.27	
5	Average Aggregate impact value	(%)	24.35			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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CONSULTANTS

Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		WMM		Proposed Use	WMM
Sample Location		Shiradi Sai Rathan Layout 2nd c/s road		Date of Sampling	20-06-2021
				Date of Testing	21-06-2021
Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	627	83	523	75
16.0	12.5	1136	122	1005	122
12.5	10.0	766	65	739	53
10.0	6.3	618	58	572	45
Total		3147	328	2839	295

Note: Minimum 200 Pcs should be taken on each fraction of test

		Flakiness Index(%):	10.42		
		Elongation Index(%):	10.39		
		Combined FI+EL (%)	20.81		

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	21-06-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 2

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Shiradi Sai Rathan Layout 2nd c/s road	Date of Sampling:	20-06-2021
		Date of testing:	21-06-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	396	396	3.96	96.04	95-100
22.4	2382	2778	27.78	72.22	60-80
11.2	2488	5266	52.66	47.34	40-60
4.75	1456.0	6722	67.22	32.78	25-40
2.36	792.0	7514	75.14	24.86	15-30
0.6	850.0	8364	83.64	16.36	8.0-22.0
0.075	990.0	9354	93.54	6.46	0-8
Pan	646.0	10000			
Total	10000.0				

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**21-06-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	1	2
Chainage	**Shiradi Sai Rathan Layout 2nd c/s road at Ch:65**	**Shiradi Sai Rathan Layout 2nd c/s road at Ch:155**
Wt. of wet material from hole (Ww) gms.	5985	5968
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10597
Wt. of sand in hole+ cone (w3) gms.	4405	4403
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3323
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.38	2.37
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.24	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.47	98.25
% compaction required	98%	98%

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	30-06-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 3

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Shiradi Sai Rathan Layout 1st A c/s r	Date of Sampling:	29-06-2021
		Date of testing:	30-06-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	369	369	3.69	96.31	95-100
22.4	2415	2784	27.84	72.16	60-80
11.2	2436	5220	52.20	47.80	40-60
4.75	1485.0	6705	67.05	32.95	25-40
2.36	792.0	7497	74.97	25.03	15-30
0.6	840.0	8337	83.37	16.63	8.0-22.0
0.075	982.0	9319	93.19	6.81	0-8
Pan	681.0	10000			
Total	10000.0				

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TEJUS CONSULTANTS
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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	Shiradi Sai Rathan Layout 1st A c/s road	**Date of Sampling**	**29-06-2021**
		Date of Testing	**30-06-2021**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	611	86	523	73
16.0	12.5	1132	123	966	116
12.5	10.0	775	58	734	52
10.0	6.3	618	63	563	48
Total		**3136**	**330**	**2786**	**289**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.52
Elongation Index(%):	10.37
Combined FI+EL (%)	20.90

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	29-06-2021
Sample Location	Shiradi Sai Rathan Layout 1st A c/s road	**Date of Testing**	30-06-2021

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	362.00	359.00	331.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	276.00	274.00	253.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	86.00	85.00	78.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.76	23.68	23.56	
5	Average Aggregate impact value	(%)	23.67			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**30-06-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Shiradi Sai Rathan Layout 1st A c/s road at Ch:50**	**Shiradi Sai Rathan Layout 1st A c/s road at Ch:105**
Wt. of wet material from hole (Ww) gms.	5975	5990
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10590
Wt. of sand in hole+ cone (w3) gms.	4405	4410
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3330
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37
Moisture meter reading(moisture content)	6.40	6.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.23	2.24
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.21	98.49
% compaction required	98%	98%

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**30-06-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Shiradi Sai Rathan Layout 1st A c/s road at Ch:190**	**Shiradi Sai Rathan Layout 1st A c/s road at Ch:230**
Wt. of wet material from hole (Ww) gms.	5979	5985
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10595	10594
Wt. of sand in hole+ cone (w3) gms.	4405	4406
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3325	3326
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.37	2.38
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.37	98.44
% compaction required	98%	98%

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**02-07-2021**
Sample Location	Apoorva Enclave	**Date of Testing**	**03-07-2021**

Sl. No.	**Description**		**Test No.**			**Spec Limit (%)**
			1	**2**	**3**	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	374.00	356.00	340.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	286.00	271.00	259.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	88.00	85.00	81.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.53	23.88	23.82	
5	Average Aggregate impact value	(%)	23.74			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Consultant's Representative

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TEJUS
CONSULTANTS

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	Apoorva Enclave	**Date of Sampling**	**02-07-2021**
		Date of Testing	**03-07-2021**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	610	80	522	75
16.0	12.5	1146	122	983	115
12.5	10.0	774	56	726	56
10.0	6.3	619	62	562	48
Total		**3149**	**320**	**2793**	**294**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.16
Elongation Index(%):	10.53
Combined FI+EL (%)	20.69

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CONSULTANTS

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	3rd c/s road	**Date of Sampling**	**02-07-2021**
		Date of Testing	**03-07-2021**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	610	85	521	72
16.0	12.5	1125	120	982	111
12.5	10.0	775	59	722	59
10.0	6.3	610	62	565	45
Total		**3120**	**326**	**2790**	**287**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.45
Elongation Index(%):	10.29
Combined FI+EL (%)	20.74

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Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		WMM		**Proposed Use**	**WMM**
Sample Location		Hegdenagar Main Rd		**Date of Sampling**	**02-07-2021**
				Date of Testing	**03-07-2021**
Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	616	86	523	73
16.0	12.5	1130	114	988	114
12.5	10.0	774	62	722	54
10.0	6.3	615	58	562	45
Total		**3135**	**320**	**2795**	**286**

Note: Minimum 200 Pcs should be taken on each fraction of test

		Flakiness Index(%):	10.21		
		Elongation Index(%):	10.23		
		Combined FI+EL (%)	20.44		

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS, BANGALORE
Contractor	M/S Benaka Developers and Projects Pvt Ltd

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	WMM	**Proposed Use**	**WMM**
Sample Location	Shiradi Sai Rathan Layout 2nd A c/s road	**Date of Sampling**	**02-07-2021**
		Date of Testing	**03-07-2021**

Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	611	82	522	75
16.0	12.5	1125	116	978	109
12.5	10.0	775	59	730	58
10.0	6.3	613	66	566	47
Total		**3124**	**323**	**2796**	**289**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.34
Elongation Index(%):	10.34
Combined FI+EL (%)	20.68

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	03-07-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 6

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Hegdenagar Main Rd	Date of Sampling:	02-07-2021
		Date of testing:	03-07-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	379	379	3.79	96.21	95-100
22.4	1785	2164	21.64	78.36	60-80
11.2	2589	4753	47.53	52.47	40-60
4.75	2019.0	6772	67.72	32.28	25-40
2.36	795.0	7567	75.67	24.33	15-30
0.6	823.0	8390	83.90	16.10	8.0-22.0
0.075	990.0	9380	93.80	6.20	0-8
Pan	620.0	10000			
Total	10000.0				

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	03-07-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 5

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Shiradi Sai Rathan Layout 2nd A c/s road	Date of Sampling:	02-07-2021
		Date of testing:	03-07-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	366	366	3.66	96.34	95-100
22.4	1795	2161	21.61	78.39	60-80
11.2	2242	4403	44.03	55.97	40-60
4.75	2014.0	6417	64.17	35.83	25-40
2.36	1389.0	7806	78.06	21.94	15-30
0.6	775.0	8581	85.81	14.19	8.0-22.0
0.075	892.0	9473	94.73	5.27	0-8
Pan	527.0	10000			
Total	10000.0				

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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, BANGALORE
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	03-07-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 4

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	Apoorva Enclave	Date of Sampling:	02-07-2021
		Date of testing:	03-07-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	377	377	3.77	96.23	95-100
22.4	2388	2765	27.65	72.35	60-80
11.2	2475	5240	52.40	47.60	40-60
4.75	1599.0	6839	68.39	31.61	25-40
2.36	776.0	7615	76.15	23.85	15-30
0.6	809.0	8424	84.24	15.76	8.0-22.0
0.075	992.0	9416	94.16	5.84	0-8
Pan	584.0	10000			
Total	10000.0				

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Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	03-07-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 7

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	3rd c/s road	Date of Sampling:	02-07-2021
		Date of testing:	03-07-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	385	385	3.85	96.15	95-100
22.4	2136	2521	25.21	74.79	60-80
11.2	2340	4861	48.61	51.39	40-60
4.75	1992.0	6853	68.53	31.47	25-40
2.36	795.0	7648	76.48	23.52	15-30
0.6	825.0	8473	84.73	15.27	8.0-22.0
0.075	990.0	9463	94.63	5.37	0-8
Pan	537.0	10000			
Total	10000.0				

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	03-07-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 9

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	c/s b/w BDS Layout 3rd and 1st A cross Rd	Date of Sampling:	02-07-2021
		Date of testing:	03-07-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	355	355	3.55	96.45	95-100
22.4	2529	2884	28.84	71.16	60-80
11.2	2492	5376	53.76	46.24	40-60
4.75	1426.0	6802	68.02	31.98	25-40
2.36	809.0	7611	76.11	23.89	15-30
0.6	836.0	8447	84.47	15.53	8.0-22.0
0.075	995.0	9442	94.42	5.58	0-8
Pan	558.0	10000			
Total	10000.0				

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Name of Work	:	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	M/S Benaka Developers and Projects Pvt Ltd
Date of Testing	:	03-07-2021
Type of Mix	:	WMM
Sample I/D	:	WMM 8

GRADATION FOR WMM
(As per MORT&H 400-11)

Sample Location:	c/s b/w BDS Layout 4th and 3rd cross Rd	Date of Sampling:	02-07-2021
		Date of testing:	03-07-2021
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	370	370	3.70	96.30	95-100
22.4	2390	2760	27.60	72.40	60-80
11.2	2450	5210	52.10	47.90	40-60
4.75	1509.0	6719	67.19	32.81	25-40
2.36	788.0	7507	75.07	24.93	15-30
0.6	820.0	8327	83.27	16.73	8.0-22.0
0.075	990.0	9317	93.17	6.83	0-8
Pan	683.0	10000			
Total	10000.0				

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Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**03-07-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Apoorva Enclaveat Ch:50**	**Apoorva Enclaveat Ch:110**
Wt. of wet material from hole (Ww) gms.	5978	5985
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10594	10591
Wt. of sand in hole+ cone (w3) gms.	4406	4409
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3326	3329
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37
Moisture meter reading(moisture content)	6.40	6.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.23	98.44
% compaction required	98%	98%

Note:
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2. The results indicated above are based on the tests carried out on the samples collected at site/ received in the laboratory.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.
4.The material used in the site satisfied the standard of MORTH's 5th revision and hence can be used in the work.

Consultant's Representative

ಸಹಾಯಕ ಕಾರ್ಯ ಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
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PALIKE

TEJUS CONSULTANTS

Project	Improvements to roads and drains at Hegdenagar and surrounding area in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS, BANGALORE	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	**03-07-2021**
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Apoorva Enclaveat Ch:165**	**Apoorva Enclaveat Ch:210**
Wt. of wet material from hole (Ww) gms.	5988	5990
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10594	10585
Wt. of sand in hole+ cone (w3) gms.	4406	4415
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3326	3335
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.38	2.37
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.24	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.49	98.25
% compaction required	98%	98%

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-26

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Project	Improvements to roads and drains at Hegdenagar and surrounding areas in Ward No 06 Byatarayanapura sub division	
Client	Bruhat Bengaluru Mahanagara Palike	
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore	
Contractor	M/S Benaka Developers and Projects Pvt Ltd	
Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date: 03-07-2021	
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	**1**	**2**
Chainage	**Apoorva Enclaveat Ch:260**	**Apoorva Enclaveat Ch:310**
Wt. of wet material from hole (Ww) gms.	5980	5984
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10594	10595
Wt. of sand in hole+ cone (w3) gms.	4406	4405
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3326	3325
Bulk density of sand (ys)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (yb)=(Ww/w4*(ys))gm/cc	2.37	2.38
Moisture meter reading(moisture content)	6.30	6.30
Result		
FDD(Wt.of the dry material)=(100yb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.35	98.45
% compaction required	98%	98%

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